REMARKS

Claims 1 to 10 and 13 to 23 are all the claims pending in the application, prior to the present Amendment.

Claim 19 has been objected to because the term "claim" has been omitted before the term "18" in line 2 of the claim.

Applicants have amended claim 19 to correct this error.

Claims 1-4 and 13-15 have been rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent 6,489,026 to Nishimura et al.

Applicants submit that Nishimura et al do not disclose or render obvious the subject mater of the above claims and, accordingly, request withdrawal of this rejection.

The present invention as set forth in claim 1 as amended above is directed to carbonaceous material for forming an electrically conductive composition, comprising a vapor grown carbon fiber, each fiber filament of the carbon fiber containing a hollow space along the filament in its interior and having a multi-layer structure, an outer diameter of 2 to 500 nm and an aspect ratio of 10 to 15,000, graphitic particles that contain boron and amorphous carbon particles, wherein the amount of the vapor grown carbon fiber is 10 to 90 mass%, the amount of the graphitic particles is 3 to 65 mass%, and the amount of the amorphous carbon particles is 7 to 35 mass%.

Thus, applicants have amended claim 1 to recite that the graphite particles contain boron. In view of this amendment, applicants have canceled claim 7.

Nishimura et al disclose that:

- Carbonaceous materials such as carbon fiber may be optionally added to a negative electrode to enhance the conductivity of the negative electrode (see column 2, lines 17-19);
- The crystallinity of a negative electrode material has been enhanced to thereby improve the charge-discharge capacity of a battery, and this trend forces an additive other than a negative electrode material to have a high discharge capacity (see column 2, lines 61-65); and
- The object of the Nishimura et al invention is to develop fine carbon fibers having a high crystallinity that has not been produced through a conventional method or having a high crystallinity, and to provide a battery electrode having a higher performance by containing the developed carbon fibers as a filler (see column 3, lines 37-42).

That is, the object of Nishimura et al is to provide carbon fibers having excellent performance used as an additive to a negative electrode having a high crystallinity, i.e., graphite material. In the Examples of Nishimura et al, negative electrodes are produced in which carbon fibers are added in an amount of 3 to 5 mass% to graphite particles.

Accordingly, Nishimura et al neither disclose nor suggest a composition comprising three elements of vapor grown carbon fiber, graphite particles and amorphous carbon particles as essential components. Particularly, the invention of Nishimura et al is to obtain a graphite material having excellent performance as a material for a negative electrode by adding thereto

vapor grown carbon fiber. The Nishimura et al invention would not motivate one of ordinary skill in the art to further blend amorphous carbon particles into the graphite material.

Further, Nishimura et al do not teach the blend ratio of the present invention. When adding carbon filler to a resin, which is an insulating body, it would be difficult to anticipate what sort of filler should be added and what additive amount should be added to improve the conductivity of the resin. This is because the additivity between the amount of the filler and the resistance of the resin does not hold true in percolation conductivity. The reason why the additivity does not hold true is that, in addition to the additive amount of the filler, other factors such as the shape (size and aspect ratio), crystallinity (amorphous carbon or graphite) and the structure of aggregates (flocculate or orderly structure) of the carbonaceous material influence the conductivity.

Also, while addition of carbon black even in a small amount can impart conductivity to the resin owning to the larger specific surface area, graphite particles are characterized in that the addition of a large amount to resin is required to impart conductivity, since they have a small specific surface area and aspect ratio. The present invention enables the attaining of a composition having an enhanced conductivity by providing three elements of vapor grown carbon fiber, graphite particles and amorphous carbon particles in a specific blend ratio, which would not be obvious from the teachings of Nishimura et al.

In view of the above, applicants submit that Nishimura et al do not disclose or render obvious the subject mater of the above claims and, accordingly, request withdrawal of this rejection.

Claims 5, 6, 8-10, 21 and 22 have been rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent 6,489,026 to Nishimura et al in view of U.S. Patent Pub. 2002/0051903 to Masuko et al.

Claims 5, 6, 8-10, 21 and 22 are dependent claims. Accordingly, applicants submit that these claims are patentable over Nishimura et al for the same reasons as discussed above in connection with the rejection of claim 1 over Nishimura et al. Masuko et al do not supply the above-discussed deficiencies of Nishimura et al.

In view of the above, applicants submit that Nishimura et al and Masuko et al do not disclose or render obvious the subject mater of the above claims and, accordingly, request withdrawal of this rejection..

Claims 1-6, 9-10, 13-20 and 23 have been rejected under 35 U.S.C. § 103(a) as obvious over WO 02/49412 to Morita et al as evidenced by U.S. Patent 7,122,132 to Morita et al.

Applicants submit that Morita et al do not disclose or render obvious the subject mater of the above claims and, accordingly, request withdrawal of this rejection.

The Examiner asserts that WO '412 to Morita et al does not disclose a composition containing graphite, and does not disclose the weight % of carbon black set forth in the present claims.

The Examiner refers to the disclosure at col. 2, lines 10-20 of the U.S. Morita et al '132 patent for a disclosure of the use of a mixture of graphite and carbon powder to enhance electrical conductivity. The Examiner argues, therefore, that it would have been obvious to add

graphite into the transparent and conductive compositions of WO '412 to Morita et al, with predictable results and reasonable expectation of success.

The Examiner states that it would have been obvious to a person of ordinary skill in the art to add graphite into the conductive transparent film of Morita et al comprising VGCF, carbon black and resin.

In response, applicants point out that in order to impart conductivity to resin, a filler having a large aspect ratio, such as VGCF, can lower the resistance of the resin even in a small amount of addition. A filler such as carbon black having a large specific surface area can also lower the resistance in a relatively small amount of addition (due to a network formation through an orderly structure). However, since graphite particles subjected to heat treatment at a high temperature have a small specific surface area and aspect ratio, they cannot impart conductivity to a resin unless added in a larger amount compared to that of the above-mentioned fillers,

Accordingly, the Examiner's statement that it would have been obvious to one of ordinary skill in the art to add graphite into the conductive transparent resin composition of Morita et al is not correct since Morita et al consciously use VGCF or VGCF and carbon black in combination in order to attain transparency.

In fact, the disclosure that the Examiner refers to at column 2, lines 10-20 of Morita et al '132, continues to column 2, line 25, and is a disclosure of a prior art attempt to prepare an electrically conductive transparent composition comprised of a mixture of graphite and carbon powder. The disclosure indicates that the prior art produced a composition having a low conductivity, and that conventional electrically conductive coatings or electrically conductive

films encounter difficulty in attaining both transparency and high electrical conductivity. This disclosure is not a teaching that graphite should be employed.

Further, a conductive transparent film cannot be obtained by adding VGCF, carbon black and graphite particles in resin. In view of this, it is improbable to further add graphite particles to resin in Morita et al.

In view of the above, applicants submit that Morita et al do not disclose or render obvious the subject mater of the above claims and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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